

## COMPLETE LISTING OF THE CLAIMS

The following lists all of the claims that are or were in the above-identified patent application. The status identifiers respectively provided in parentheses following the claim numbers indicate the current statuses of the claims.

1. (Previously Presented) An integrated optical apparatus configured to detect and diffract light transmitted from a light source external to the integrated optical apparatus, the integrated optical apparatus comprising:
  - a substrate; and
  - a diffractive optical element including:
    - a plurality of stacked layers of optically transmissive material formed on the substrate, wherein at least one of the layers of optically transmissive material is a sensing element having a resistance responsive to incident light.
- 2-4. (Canceled)
5. (Previously Presented) The integrated optical apparatus as in claim 1, wherein the sensing element is configured to provide a response to a control circuit, external to the integrated optical apparatus, for measuring the response of the sensing element to incident light, and for controlling the light source.
6. (Previously Presented) The integrated optical apparatus as in claim 1, wherein the light source is a laser.
- 7-9. (Canceled)

10. (Previously Presented) The integrated optical apparatus as in claim 1, further comprising:  
a first and second contact on the sensing element for measuring the resistance of the sensing element.
11. (Previously Presented) The integrated optical apparatus as in claim 1, wherein the optically transmissive material includes a semiconductor.
- 12-18. (Canceled)
19. (Previously Presented) The integrated optical apparatus as in claim 1, wherein the temperature of the sensing element is responsive to light.
20. (Previously Presented) The integrated optical apparatus as in claim 1, wherein at least two of the layers of optically transmissive material are sensing elements having resistances responsive to incident light.
21. (Previously Presented) The integrated optical apparatus as in claim 1, wherein at least two adjacent layers of optically transmissive material are sensing elements having resistances responsive to incident light.
22. (Previously Presented) The integrated optical apparatus as in claim 1, wherein at least two non-adjacent layers of optically transmissive material are sensing elements having resistances responsive to incident light.
23. (Previously Presented) The integrated optical apparatus as in claim 1, wherein all of the layers of optically transmissive material are sensing elements having resistances responsive to incident light.